Smart Solenoid Valve Control Box (PCBA)

Model: PBB Series

Product Features

- **Energy Efficient:** Significantly reduces power consumption.
- **Low Temperature Rise:** Lowers coil temperature by over 50% to extend lifespan.
- **Stable Performance:** Built-in temperature compensation for reliable operation.
- **Circuit Protection:** Integrated overcurrent fuse for enhanced safety.
- **Flexible Settings:** Supports adjustable holding current and transition time to power-saving mode
- **Fast Response:** Suitable for high-frequency switching applications.
- **Certified Quality:** RoHS and CE compliant.

Product Description

The PBB series control box is a compact interface electronic device integrated into a DIN 43650 Type B connector, designed to enhance the service life and performance of solenoid valves. The product features a power-saving circuit that reduces coil temperature while ensuring reliable valve operation during switching.

The PBB series power conversion circuit does not generate EMI issues. In addition, a flashing LED indicator notifies users when the unit enters power-saving mode. The level of power saving and the delay time before entering power-saving mode can be adjusted according to customer requirements.

For different coils and solenoid valves, the PBB series can provide varying energy-saving performance, with adjustable parameters to suit specific customer applications.

Note 1: When the unit enters power-saving mode and the current is reduced, the LED brightness will dim briefly and then remain steadily illuminated at the same brightness level.

Product Applications

- Solenoid valves
- Valve Terminals
- Electromagnets
- Relays

Product Functions

- Operating voltage range: 12/24VDC (-10% / +10%)
- Pulse output current: Max. 500mA
- Continuous output current: Max. 300mA (adjustable)
- Energy-saving rate: Up to 80%
- Temperature reduction: At least 50°C
- Power-saving activation time adjustable from 0–999 ms (+/-10%)
- No electromagnetic interference (EMI) or magnetic loss
- No magnetic noise during operation
- Operating temperature: -20°C to 60°C
- Module model: PB Series

Note 2: Performance depends on the coil specifications and the ON/OFF timing sequence of the solenoid valve.

Note 3: A built-in fuse is included to provide protection against surge events and external power-related safety issues.

Electrical Parameters

Parameter		Min	Max	Unit
Operating Voltage	12V	10.8	13.2	V
	24V	21.6	26.4	V
Maximum Pulse Current		0	0.5	A
Maximum Continuous Current		0	0.15 (24V), 0.3(12V)	A
Allowable Coil Resistance		full range		Ohm
Switching Time		1	999	mS
Holding Power	0.1W	90	110	mW
	0.2W	180	220	
	0.3W	270	330	
	0.4W	450	550	
ESD Protection		4000		V
Operating Temperature		-20	60	

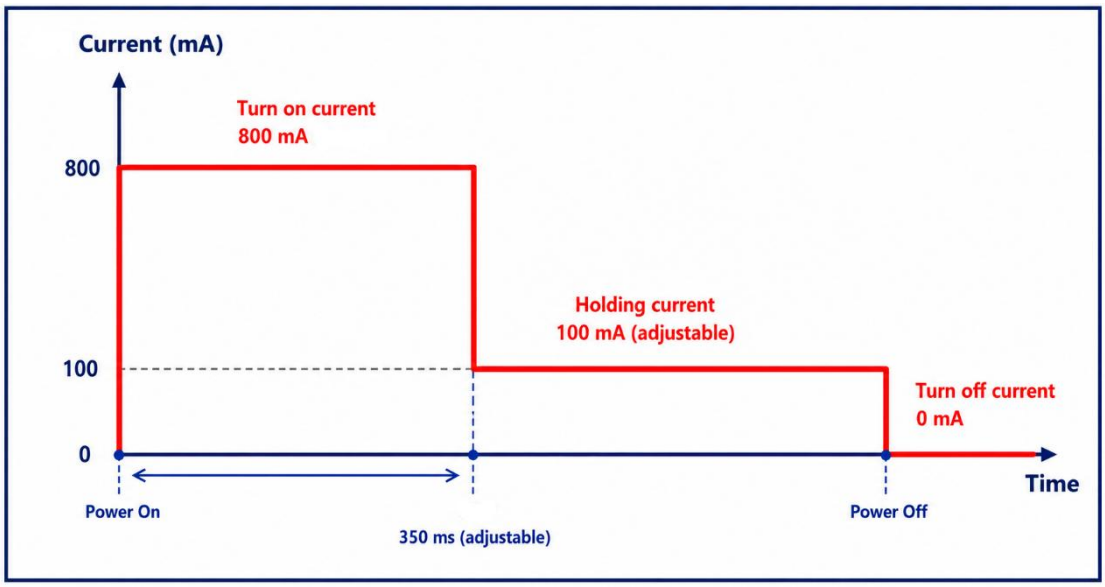
Note 4: The maximum duration for standard continuous holding force is 4 hours.

Note 5: If your application does not meet the specifications listed above, we can accommodate your needs through customisation.

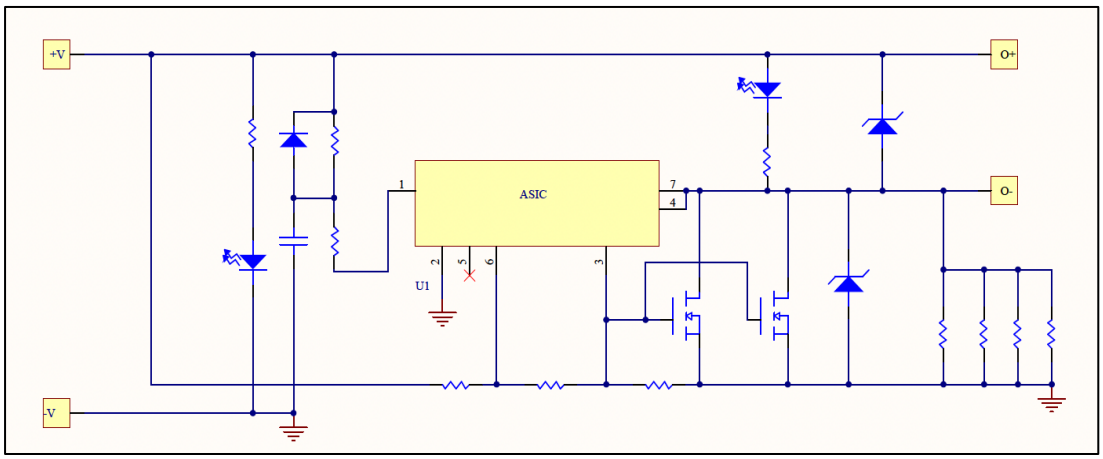
Note 6: This product automatically shuts off when the input voltage falls below the minimum operating voltage and eliminates the coil discharge voltage.

Note 7: The correct operating method is to use a 12V input voltage with a 12V coil, and a 24V input voltage with a 24V coil. Using a 24V input voltage with a 12V coil will result in improper operation

Energy-Saving Mode Main Function



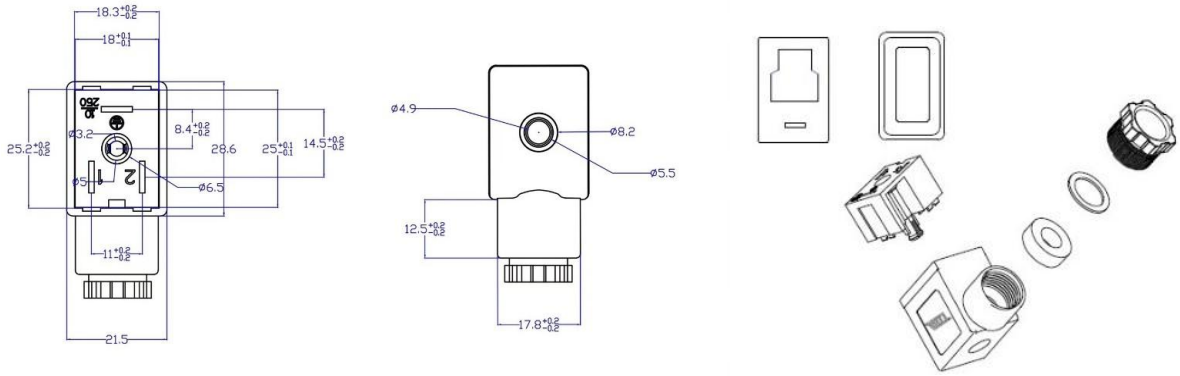
Circuit Diagram Description



Built-in Surge Protection, LED ×2 (Power Indicator & Energy-Saving Indicator)

Energy-Saving Control Box Dimensions & 3D View

Unit: mm (DIN43650b)



Ordering Information

PBB-VV-WW-SS

VV: Input Voltage range [unit: V]

VV value	**12**	**24**
Minimum Input [V]	10.8	21.6
Maximum Input [V]	13.2	26.4

WW: Continuous Current [Unit: mW]

WW value	**01**	**03**	**05**
P Continuous [mW]	100	300	500

SS: Translate Time (second stage time) [unit: ms]

SS value	**20**	**35**	**50**
Delay time	200ms	350ms	500ms

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